

Winslow Schools
Mathematics Curriculum – Grade 3
Unit 4

Overview	Standards for Mathematical Content	Unit Focus	Standards for Mathematical Practice
<p>Unit 4</p> <p>Representing Data</p>	<ul style="list-style-type: none"> ● 3.MD.B.3 ● 3.MD.B.4 ● 3.OA.C.7* ● 3.OA.D.8* ● 3.NBT.A.2* ● 3.MD.C.7d* 	<ul style="list-style-type: none"> ● Represent and interpret data ● Multiply and divide within 100 ● Use place value understanding and properties of operations to perform multi-digit arithmetic ● Understand concepts of area and relate area to multiplication and to addition 	<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p>
<p><i>Unit 4: Suggested Open Educational Resources</i></p>	<p>3.MD.C.7d Three Hidden Rectangles</p> <p>3.OA.D.8 The Stamp Collection</p> <p>3.NBT.A.2, 3.MD.B.3, 3.OA.A.3 Classroom Supplies</p>		<p>MP.3 Construct viable arguments and critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>

Major Supporting Additional (Identified by PARCC Model Content Frameworks).

Curriculum Unit 4	Standards		Pacing	
			Days	Unit Days
Unit 4 Representing Data	● 3.MD.B.3	Draw scaled picture and scaled bar graphs to represent data with several categories. Solve one and two-step word problems using scaled bar graphs.	10	45
	● 3.MD.B.4	Depict data measured in fourths and halves of an inch with a line plot with scales marked with appropriate units	3	
	● 3.OA.C.7*	Fluently multiply and divide <u>within 100</u> using strategies such as the relationship between multiplication and division.	7	
	● 3.OA.D.8*	Write equation(s) containing an unknown and find the value of an unknown in an equation that is a representation of a two-step word problem (with any four operations); use estimation strategies to assess the reasonableness of answers.	7	
	● 3.NBT.A.2*	Fluently add and subtract <u>within 1000</u> using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	7	
	● 3.MD.C.7d*	Solve real world problems involving finding areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts.	6	
	Assessment, Re-teach and Extension		5	

Unit 4 Grade 3

Content Standards	Suggested Standards for Mathematical Practice	Critical Knowledge & Skills
<ul style="list-style-type: none"> 3.MD.B.3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</i> 	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics.	Concept(s): <ul style="list-style-type: none"> Graphs organize information and contain labels. Pictures and bars can represent numbers in graphs. Different graphs may display different scales. Students are able to: <ul style="list-style-type: none"> draw scaled picture graphs. draw scaled bar graphs. analyze, interpret and create bar graphs and pictographs in real world situations. solve “how many more” and “how many less” problems using scaled bar graphs. Learning Goal 1: Draw scaled picture and scaled bar graphs to represent data with several categories. Solve one and two-step word problems using scaled bar graphs.
<ul style="list-style-type: none"> 3.MD.B.4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. 	MP.2 Reason abstractly and quantitatively. MP.5 Use appropriate tools strategically.	Concept(s): <ul style="list-style-type: none"> Show measurements on a line plot displays the information in an organized way Students are able to: <ul style="list-style-type: none"> measure length using rulers marked with inch, quarter inch and half inch generate measurement data by measuring length and create a line plot of the data accurately measure several small objects using a standard ruler and display findings on a line plot display data on line plots with horizontal scales in whole numbers, halves, and quarters Learning Goal 2: Depict data measured in fourths and halves of an inch with a line plot with scales marked with appropriate units
<ul style="list-style-type: none"> 3.OA.C.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. *(benchmarked) 	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: <ul style="list-style-type: none"> multiply and divide <u>within 100</u> with accuracy and efficiency. Learning Goal 3: Fluently multiply and divide <u>within 100</u> using strategies such as the relationship between multiplication and division.

<ul style="list-style-type: none"> 3.OA.D.8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. *(benchmarked) 	<p>MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4. Model with mathematics MP.5 Use appropriate tools strategically. MP.6 Attend to precision.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> A letter or variable in an equation represents an unknown quantity. <p>Students are able to:</p> <ul style="list-style-type: none"> represent two-step word problems with equation(s) containing unknowns. perform operations in the conventional order (no parentheses). use rounding as an estimation strategy. explain, using an estimation strategy, whether an answer is reasonable. <p>Learning Goal 4: Write equation(s) containing an unknown and find the value of an unknown in an equation that is a representation of a two-step word problem (with any four operations); use estimation strategies to assess the reasonableness of answers.</p>
<ul style="list-style-type: none"> 3.NBT.A.2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. *(benchmarked) 	<p>MP.2 Reason abstractly and quantitatively.</p>	<p>Concept(s): No new concept(s) introduced</p> <p>Students are able to:</p> <ul style="list-style-type: none"> add and subtract <u>within 1000</u> with accuracy and efficiency. <p>Learning Goal 5: Fluently add and subtract <u>within 1000</u> using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>
<ul style="list-style-type: none"> 3.MD.C.7. Relate area to the operations of multiplication and addition. 3.MD.C.7d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. *(benchmarked) 	<p>MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.</p>	<p>Concept(s):</p> <ul style="list-style-type: none"> Areas of rectilinear figures can be determined decomposing the them into non-overlapping rectangles and adding the areas of the parts. <p>Students are able to:</p> <ul style="list-style-type: none"> decompose rectilinear figures into non-overlapping rectangles. find areas of non-overlapping rectangles and add to find the area of the rectilinear figure. solve real world problems involving area of rectilinear figures. <p>Learning Goal 6: Solve real world problems involving finding areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts.</p>

Unit 4 Grade 3

School/District Formative Assessment Plan	School/District Summative Assessment Plan
Pre-Assessment, Quizzes Do Now Exit Tickets Daily Monitoring Lesson Check Assessments: <ul style="list-style-type: none"> ● Teacher constructed ● Provided by Textbook or online resource 	Go Math! Unit Benchmarks Link It Mid-Chapter Checkpoint Chapter Tests: <ul style="list-style-type: none"> ● Online Assessments ● Textbook Review/Test

Focus Mathematical Concepts

Prerequisite skills:

Achieve the Core Coherence Map

<https://achievethecore.org/coherence-map/>

Standards:

3.MD.B.3: none

3.MD.B.4: 2.MD.1, 2.MD.9

3.OA.C.7: 3.OA.5, 3.OA.6

3.OA.D.8: 2.OA.1, 3.OA.3, 3.OA.4, 3.OA.7, 3.NBT.1

3.NBT.A.2: 2.NBT.5, 2.NBT.6, 2.NBT.7, 2.NBT.9

3.MD.C.7d: 3.OA.7, 3.MD.6, 3.MD.7a

Common Misconceptions:

3.MD.B.3 & 3.MD.B.4 Although intervals on a bar graph are not in single units, students count each square as one. To avoid this error, have students include tick marks between each interval. Students should begin each scale with 0. They should think of skip-counting when determining the value of a bar since the scale is not in single units.

3.OA.C.7 Student who struggle most likely do not have fluency for the easy numbers. The child does not understand an unknown factor (a divisor) can be found from the related multiplication. It is not a matter of instilling facts divorced from their meaning, but rather the outcome of carefully designed learning. That involves the interplay of practice and reasoning.

Number Fluency:

3.OA.7 Students fluently multiply and divide within 100. By the end of grade 3, they know all products of two one-digit numbers from memory.

3.NBT.2 Students fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Think Central Online Resource: Strategies and Practice for Skills and Facts Fluency

Achieve the Core – GoMath Fluency Activities

<https://achievethecore.org/page/2853/go-math-k-5-guidance-documents>

Achieve the Core – Fluency Activities

<https://achievethecore.org/page/2948/fluency-resources-for-grade-level-routines>

Xtra Math

https://xtramath.org/#/signin/student_other

Engage NY Sprints

<https://www.saugerties.k12.nv.us/site/handlers/filedownload.ashx?moduleinstanceid=9558&dataid=14912&FileName=G3-M1-SPRINTS-FINAL.pdf>

Math Coach – Fact Fluency <http://schoolwires.henry.k12.ga.us/Page/21865>

Math Wire – Basic Facts Link <http://mathwire.com/numbersense/bfactslinks.html>

Math Fact Practice <http://www.playkidsgames.com/games/mathfact/mathFact.htm>

District/School Tasks

NJDOE Digital Item Library

<https://nj.digitalitemlibrary.com/home>

NJSLA Mathematics Evidence Statements

<https://docs.google.com/spreadsheets/d/18M5r1jk4P729fTpAlWAzrw1gE6tken233I-Yk0U712M/edit#gid=554025491>

LinkIt! Form A, B, & C

District/School Primary and Supplementary Resources

Text: Go Math!

Think Central Online Resources: <https://www-k6.thinkcentral.com/ePC/start.do>

Go Math- Strategic Intervention Teacher Activity Guide

HMH Getting Ready for the PARCC Assessments

Go Math Chapter Resources

- Chapter 11 (cont)
- Chapter 2
- Chapter 12

3rd grade Flip Book:

<http://community.ksde.org/Default.aspx?tabid=5646>

North Carolina Dept of Ed. Wikispaces:

<http://maccss.ncdpi.wikispaces.net/Elementary>

PARCC Math Resources

<http://www.parcc-assessment.org/assessments/test-design/mathematics/math-test-specifications-documents>

101 Math Discourse Questions:

http://www.casamples.com/downloads/100MathDiscourseQuestions_Printable.pdf

Asking Effective Questions

http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/CBS_AskingEffectiveQuestions.pdf

Instructional Best Practices and Exemplars

- | | |
|---|--|
| 1. Identifying similarities and differences | 6. Cooperative learning |
| 2. Summarizing and note taking | 7. Setting objectives and providing feedback |
| 3. Reinforcing effort and providing recognition | 8. Generating and testing hypotheses |
| 4. Homework and practice | 9. Cues, questions, and advance organizers |
| 5. Nonlinguistic representations | 10. Manage response rates |

Vocabulary

3.MD.B.3 & 4

Represent and interpret data.

scale, scaled picture graph, scaled bar graph, line plot, data, key, picture graph, vertical bar graph, survey, tally table

3.OA.C.7

Multiply and divide within 100.

operation, multiply, divide, factor, product, quotient, unknown, strategies, reasonableness, mental computation, property

3.OA.D.8

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

operation, multiply, divide, factor, product, quotient, subtract, add, addend, sum, difference, equation, expression, unknown, strategies, reasonableness, mental computation, estimation, rounding

3.NBT.A.2

Use place value understanding and properties of operations to perform multi-digit arithmetic.

place value, round, addition, add, addend, sum, subtraction, subtract, difference, strategies, Distributive, (properties)-rules about how numbers work, inverse operations

3.MD.C.7

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

attribute, area, square unit, plane figure, gap, overlap, square cm, square m, square in., square ft, nonstandard units, tiling, side length, decomposing

9.1 Personal Financial Literacy, 9.2 Career Awareness, Exploration, Preparation and Training & 9.4 Life Literacies and Key Skills

9.1.5. EG.4: Describe how an individual's financial decisions affect society and contribute to the overall economy

9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate).

9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

9.2.5.CAP.2: Identify how you might like to earn an income.

9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and points of view (e.g., 1.1.5.C2a, RL.5.9, 6.1.5.HistoryCC.8).

9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).

The implementation of the 21st Century skills and standards for students of the Winslow Township District is infused in an interdisciplinary format in a variety of curriculum areas that include, English language Arts, Mathematics, School Guidance, Social Studies, Technology, Visual and Performing Arts, Science, Physical Education and Health, and World Language.: Additional opportunities to address 9.1, 9.2 & 9.4:

Philadelphia Mint

<https://www.usmint.gov/learn/kids/resources/educational-standards>

Different ways to teach Financial Literacy.

<https://www.makeuseof.com/tag/10-interactive-financial-websites-teach-kids-money-management-skills/>

Suggested Modifications for Special Education/504

Students with special needs: The students' needs will be addressed on an individual and grade level using a variety of modalities.

Accommodations will be made for those students who need extra time to complete assignment. Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Physical expectations and modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered.

- Provide the opportunity to re-take tests
- Modify activities/assignments/projects/assessments
- Breakdown activities/assignments/projects/assessments into manageable units
- Additional time to complete activities/assignments/projects/assessments
- Provide an option for alternative activities/assignments/projects/assessments
- Modify Content
- Modify Amount
- Small Group Intervention/Remediation
- Individual Intervention/Remediation
- Additional Support Materials
- Guided Notes
- Graphic Organizers
- Adjust Pacing of Content
- Increase one on one time
- Peer Support
- Other Modifications for Special Education:
 - Think Central Online Resources:
 - Reteach
 - Strategic Intervention
 - Intensive Intervention Skill Pack
 - Response to Intervention Activities

Suggested Modifications for At-Risk Students

Formative and summative data will be used to monitor student success. At first signs of failure, student work will be reviewed to determine support. This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations

- Provide the opportunity to re-take tests
- Increase one on one time
- Oral prompts can be given
- Using visual demonstrations, illustrations, and models
- Give directions/instructions verbally and in simple written format
- Peer Support
- Modify activities/assignments/projects/assessments
- Additional time to complete activities/assignments/projects/assessments
- Provide an option for alternative activities/assignments/projects/assessments
- Modify Content
- Modify Amount
- Adjust Pacing of Content
- Small Group Intervention/Remediation
- Individual Intervention/Remediation
- Additional Support Materials
- Guided Notes
- Graphic Organizers
- Other Modifications for Students At-Risk:
 - Think Central Online Resources:
 - Reteach
 - Strategic Intervention
 - Intensive Intervention Skill Pack
 - Response to Intervention Activities

English Language Learners	Suggested Modifications for Gifted Students
<p>All WIDA Can Do Descriptors can be found at this link: https://wida.wisc.edu/teach/can-do/descriptors</p> <p><input type="checkbox"/> Grades 2-3 WIDA Can Do Descriptors:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Listening <input type="checkbox"/> Speaking <input type="checkbox"/> Reading <input type="checkbox"/> Writing <input type="checkbox"/> Oral Language <p>Students will be provided with accommodations and modifications that may include:</p> <ul style="list-style-type: none"> • Relate to and identify commonalities in mathematics studies in student’s home country • Assist with organization • Use of computer • Emphasize/highlight key concepts • Teacher Modeling • Peer Modeling • Label Classroom Materials - Word Walls 	<p>Students excelling in mastery of standards will be challenged with complex, high level challenges related to the topic.</p> <ul style="list-style-type: none"> • Raise levels of intellectual demands • Require higher order thinking, communication, and leadership skills • Differentiate content, process, or product according to student’s readiness, interests, and/or learning styles • Provide higher level texts • Expand use of open-ended, abstract questions • Critical and creative thinking activities that provide an emphasis on research and in-depth study • Enrichment Activities/Project-Based Learning/ Independent Study <p>Additional Strategies may be located at the links:</p> <ul style="list-style-type: none"> ❖ Gifted Programming Standards ❖ Webb’s Depth of Knowledge Levels and/or Revised Bloom’s Taxonomy ❖ REVISED Bloom’s Taxonomy Action Verbs

Suggested Activities

- Do Now/Warm-Up
- Whole Group
- Small Groups
- Guided Practice
- Independent Practice
- HMH Getting Ready for the PARCC Assessments
- Go Math Concepts Readers
- Go Math Stem Activities
- Mega Math- Think Central Online Resource
- Go Math Animated Math Models
- Go Math Grab and Go Activity Center Cards
- Math on the Spot Video Tutorials- Think Central Online Resource
- Go Math! Personal Math Trainer

- Centers
- Intervention/Remediation
- Projects
- Link It Library
- Academic Games
- Other Suggested Activities:
 - Khan Academy
 - Brain Pop Jr.
 - Prodigy
 - Kahoot

Interdisciplinary Connections

Go Math Grab and Go! Activities (Reading, Science, Math, Social Studies)

Go Math Real World Project: Big Idea, Geometry (Math, Reading, Writing, Science, Social Studies)

Go Math Cross-Curricular Science and Social Studies questions, experiments, and activities embedded throughout the chapter.

Integration of Computer Science and Design Thinking NJSL 8

8.1.5.CS.1: Model how computing devices connect to other components to form a system.

8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.

8.1.5.NI.2: Describe physical and digital security measures for protecting sensitive personal information.

8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.

8.1.5.IC.2: Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.

8.1.5.AP.1: Compare and refine multiple algorithms for the same task and determine which is the most appropriate.